EDITORIAL REPORT ON NOMENCLATURE, 1957.*

Definitive rules of nomenclature for inorganic chemistry, a further large section of the definitive rules of nomenclature for organic chemistry, definitive rules of nomenclature of steroids, and tentative rules of nomenclature of vitamin B_{12} were approved at the meeting of the International Union of Pure and Applied Chemistry at Paris in 1957, and their publication is expected during 1958. Until this publication becomes available and has been considered by The Chemical Society these new rules will not be discussed in these Editorial Nomenclature Reports. The Editor may, however, be able to provide guidance to those concerned with specialised aspects.

In view of these forthcoming publications, and for other reasons, nomenclature in the Society's publications during 1957 has been mainly on established lines. The problems that have arisen have been mostly of specialist interest, but the following few points may be mentioned here.

(1) The term " double-bonding ligand " indicates a ligand which possesses a strong σ-bond and also a strong π-bond. The terms " π-bonding ligand " and " σ-bonding ligand " refer to ligands which form bonds deriving their strength mainly from π-bonds and σ-bonds respectively. This distinction between the σ-bond strengths of ligands possessing π-bonds in addition is important in discussions of stabilities and of directive effects in complex compounds. Thus the " *trans*-directing " properties of the ligands CO, PCl_3, PF_3, C_2H_4, methyldiphenylarsine, and *o*-phenylenebisdimethylarsine are all fairly high, but the relative stabilities of platinum(II) compounds involving these ligands differ markedly with respect to heat, moisture, and excess of ligand (*J.*, 1957, 2018).

(2) A nomenclature generally adaptable for mesoionic compounds (sydnones, etc.) is badly needed but not yet in sight. In the meanwhile, use of the prefix ψ is probably the best available (cf. *J.*, 1957, 1556) when trivial names such as sydnone do not exist.

(3) Problems in stereochemistry arise with increasing frequency. Solutions (perhaps only temporary) of three problems during the year may find analogous uses.

(*a*) It was necessary to distinguish the three stereoisomeric 1 : 5-dichloroanthraquinone dioximes (*J.*, 1957, 1901). The terms *syn* and *anti* were used to describe the mutual stereochemical relations of the oxime groups, and *cis* and *trans* to describe the configurations of these groups with respect to the nearer chlorine atom.

(*b*) In a paper dealing with cyclitol derivatives (*J.*, 1957, 3691) the most satisfactory method of designating the (absolute) configuration at each asymmetric centre was the *R*, *S* symbolism (Cahn, Ingold, and Prelog, *Experientia*, 1956, **12**, 81) but this obscured the *cis-trans*-relations which are the characteristic feature of this field. The solution adopted was to use the customary inositol-type of nomenclature supplemented by the *R* or *S* symbol for the lowest-numbered asymmetric centre. This method is capable of wide application.

(*c*) A situation arose where conversion of a sugar into its alcohol introduced an additional element of symmetry in such a way that strict application of nomenclature rules obscured the chemical relations. D-Ribitol 5-phosphate is the same substance as L-ribitol 1-phosphate. According to the standard rules of nomenclature, the name with the lower number should have preference, *i.e.*, L-ribitol 1-phosphate. Nevertheless, D-ribitol 5-phosphate was used in the paper (*J.*, 1957, 1870) because of its use in previous papers and because the substance is probably related metabolically to D-ribose 5-phosphate and D-ribulose 5-phosphate and is degraded to D-glyceric acid. Moreover, it was important to avoid the possible implication that L-ribitol 1-phosphate is in any way related to L-α-glycerophosphoric acid. These two compounds are, in fact, in stereochemically opposite series. The correct name for the naturally occurring

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L-α-glycerophosphoric acid, according to standard rules of nomenclature, is D-glycerol 1-(dihydrogen phosphate) (equivalent to the 3-phosphate). However, probably for reasons concerning its biochemical origin, the L-α or L-3 nomenclature has always been adopted for this compound.

(4) Attention is directed to two bad practices which are becoming increasingly common in chemical papers. One is the loose use of words ending in " lysis ". Lysis denotes fission; " heterolytic fission " is a tautological phrase. In fact, great care is needed in use of " lysis." In chemistry it means " fission by ", *e.g.*, electrolysis, hydrolysis, solvolysis, pyrolysis. Homolysis and heterolysis are exceptions, for they denote fission of a bond *in* an electronically symmetrical and asymmetrical manner, respectively. But in biochemistry and biology the term lysis usually denotes fission *of*, *e.g.*, amylolytic, carcinolysis, lipolysis, plasmolysis. In chemical papers the chemical usage of " fission *by* " should be adhered to. Better, such terms should be restricted to well-established ones or to cases where no simple alternative is available: words such as chlorinolysis and diazomethanolysis are pure jargon. And the use of, *e.g.*, acetolysis to denote fission *of* an acetate group is inexcusable.

A second is tautological use of such words as reaction, process, etc., as in " reduction process ", " hydrogenation reaction ".